THE GLOBAL STANDARD FOR HARDNESS TESTING

WILSON WOLPERT

PORTABLE

HARDNESS TESTING INSTRUMENTS

WILSON WOLPERT

UNIVERSAL HARDNESS TESTER "VARIOMATIC" ™

Analogue handheld metal hardness tester WHU-100

STANDARD DELIVERY

- Main unit
- Test block
- Shoulder strap
- Manual
- WILSON-WOLPERT certificate
- Storage suitcase aluminium

Standard delivery with testblock and storage suitcase

- Perfect hardness tester for shop floor inspection
- Hardness scales Rockwell B, Rockwell C, Vickers HV, Brinell HB
- Easy to read analogue dial
- Robust grips for non-slip manual operation
- Easy to calibrate
- Delivery complete with test block

Measuring range / metals

Model	**HRC**	**HRB**	**HB**	**HV**
WHU-100	20-70	50-100	100-500	100-1000
Materials to test	Sheet and strip metals, cutters, nitriding, carburised steel, tin, plate, aluminium extrusions, mechanical parts, dies, wire, laminated metal, heavily cyanied steel, rollers, castings, bearings, cutting tools, hardened metals, chromium and nickel plating, brake linings and more...			

Technical specifications

Hardness parameter	HRC, HRB, HB, HV
Measuring range	See table
Accuracy	3% all scales
Indenter	Synthetic diamond
Anvil	V-base dia 63mm, Groove angle 120°, Width 15mm
Operating pressure	6.5 kgf
Weight	1.5 kg

WILSON WOLPERT

UNIVERSAL HARDNESS "POCKET TESTOR" ™

Handheld dynamic metal hardness tester WHU-300 with hardness conversions

STANDARD DELIVERY
- Main unit with integrated impact device type D
- Testblock with HLD-value
- 2 x AAA battery 1.5V
- Cleaning brush
- Coupling paste
- WILSON-WOLPERT certificate
- Manual
- Plastic carrying case

OPTIONAL ACCESSORIES
- Testblocks UKAS certified in any hardness parameter
- Support rings for convex and concave surfaces
- Software+ cable
- Printer + cable

Standard delivery with testblock, coupling paste and Impact device D

- Dynamic hardness testing; quick and reliable
- Impact device D integrated: no cables!
- Wide measuring range in HL and direct display of converted hardness values in Rockwell HRB, HRC, Vickers HV, Brinell HB, Shore HS
- For most metals (see table)
- Provides testing at any angle, even upside down
- Simple handling and low test expenditure
- High accuracy of ±0.5% on solid parts
- Clear LCD display showing all functions and parameters
- Data output RS232 and internal memory batch of 255 average readings
- Optional printer available
- Conforming to ASTM A 956

Materials versus range for impact device D (HLD 200-900)

Material	HRC	HRB	HRA	HB	HV	HS
Steel & cast steel	20-68	60-100	59-86	80-650	80-940	32-100
Cold work tool steel	20-68	-	-	-	80-940	-
Stainless steel	20-62	46-100	-	80-650	80-800	-
Grey cast iron	-	-	-	90-380	-	-
Nodular cast iron	-	-	-	90-380	-	-
Aluminium alloys	-	-	-	20-160	-	-
Brass	-	13-95	-	40-170	-	-
Bronze	-	-	-	60-290	-	-
Copper	-	-	-	45-315	-	-

The ranges are stipulated by the application limits of the relevant static procedure.

Technical specifications

Hardness parameter	HL, HRC, HRB, HV, HB, HS
Tensile strength UTS range (steel only)	σb from 370 to 2000 (106 N/mm²)
Measuring range / metallic materials	See table above
Accuracy	Within ± 0.5% (at HLD = 800) on solid parts
Statistics	Average value
Memory	255 average readings, date
Output	RS232
Impact device	D (standard) integrated
Workpiece max. hardness value	940HV
Workpiece radius (convex/concave)	Rmin = 50mm (with support ring Rmin= 10mm)
Workpiece minimum weight	2.5kg on solid support (0.1kg with couplant paste)
Workpiece min. thickness coupled	3mm
Workpiece min. case hardened depth	0.8mm
Indentation depth	See page: Impact devices data
Power	2 x AAA battery 1.5V (low batt warning)
Operating temperature	5 to 50°C
Overall dimensions	135 x 55 x 25mm
Weight	250 gr

WILSON WOLPERT

UNIVERSAL HARDNESS MINI-TESTER ™

Portable dynamic metal hardness tester WHU-330 with external probe

STANDARD DELIVERY
- Main unit
- Impact device type D
- Testblock HLD-value
- 2 AAA batteries
- Cleaning brush
- Coupling paste
- WILSON-WOLPERT certificate
- Manual
- Plastic carrying case

OPTIONAL ACCESSORIES
- Special impact devices (see overview on next page)
- Testblocks UKAS certified in any hardness parameter
- Support rings for convex and concave surfaces
- Mini-printer + cable
- Software + cable

WILSON WOLPERT

Standard delivery with testblock, coupling paste and Impact device D

- Dynamic hardness testing; quick and reliable
- Wide measuring range in HL value and direct display of converted hardness values in Rockwell HRB, HRC, Vickers HV, Brinell HB and Shore HS
- For most metals (see table)
- Impact device provides testing at any angle, even upside down
- **Data output RS232 and internal memory in a batch of 1250 average readings**
- Date and time display
- Lower and upper limits setting with Low-High display judge
- High accuracy ±0.5%
- Conforming to ASTM A 956
- Seven impact devices are available for special applications
- Works on standard AAA batteries; auto-off after two minutes

Materials versus range for impact device D (HLD 200-900)

Material	HRC	HRB	HRA	HB	HV	HS
Steel & cast steel	20-68	60-100	59-86	80-650	80-940	32-100
Cold work tool steel	20-68	-	-	-	80-940	-
Stainless steel	20-62	46-100	-	80-650	80-800	-
Grey cast iron	-	-	-	90-380	-	-
Nodular cast iron	-	-	-	90-380	-	-
Aluminium alloys	-	-	-	20-160	-	-
Brass	-	13-95	-	40-170	-	-
Bronze	-	-	-	60-290	-	-
Copper	-	-	-	45-315	-	-

The ranges are stipulated by the application limits of the relevant static procedure.

Technical specifications

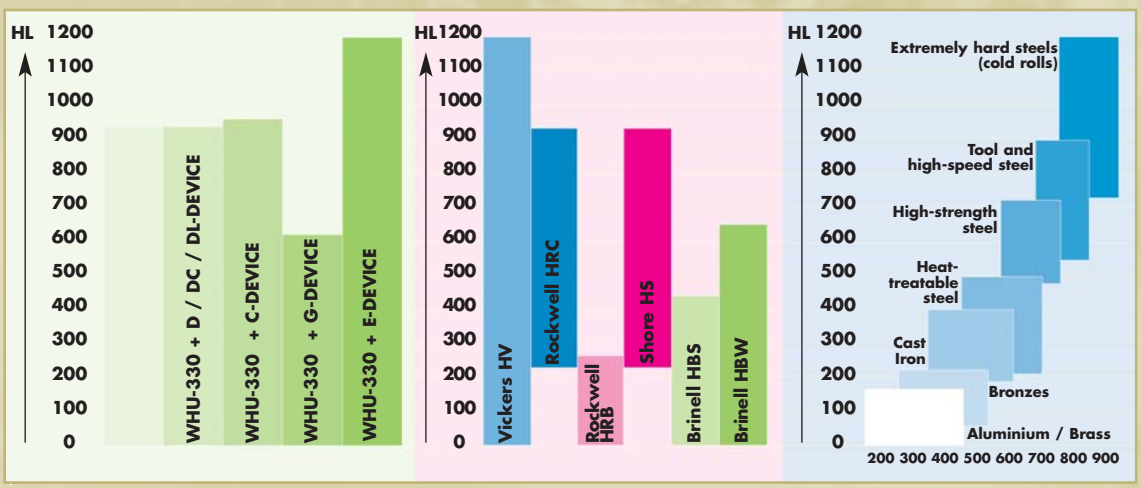
Hardness parameter	HL, HRC, HRB, HV, HB, HS
Measuring range / metallic materials	See table above
Display dimensions	128 x 64 LCD
Display functions	Hardness scale, hardness value, times, average indicator and average value, impact direction, type of impact device connected, memory reference, date, time, battery power consumption
Accuracy	Within ± 0.5% (at HLD = 800)
Statistics	Average value
Memory	1250 groups
Output	RS232 interface
Impact device	D (standard)
Optional impact devices	DC/D+15/G/C/E (see next pages)
Workpiece max. hardness value	940HV
Workpiece radius (convex/concave)	Rmin = 50mm (with support ring Rmin= 10mm)
Workpiece minimum weight	2kg on solid support (0.1kg with couplant paste)
Workpiece min. thickness coupled	3mm (except with impact device G: 10mm)
Workpiece min. case hardened depth	0.8mm
Indentation depth	See next page: Impact devices data
Power	2 AAA batteries 1.5V
Operating temperature	5 to 50°C (impact device: 120°C max. briefly)
Overall dimensions	108 x 62 x 25mm
Weight	180 gr (including impact device and printer)

IMPACT DEVICES FOR SPECIAL APPLICATIONS

Hardness testing devices for models WHU-330

TECHNICAL SPECIFICATIONS

Impact devices:	D/DC/DL	D+15	C	G	E
Impact energy:	11 Nmm	11 Nmm	3 Nmm	90 Nmm	11 Nmm
Mass of the impact body:	5,5g/DL:7,3	7,8 g	3,0 g	20 g	5,5 g
Test tip;					
▪ *Hardness*	1600HV	1600HV	1600HV	1600HV	5000HV
▪ *Diameter*	3mm	3mm	3mm	5mm	3mm
▪ *Material*			Tungsten carbide		Diamond
Impact body;					
▪ *Diameter*	20mm	20mm	20mm	30mm	20mm
▪ *Length*	147/86mm	162mm	141mm	254mm	155mm
▪ *Weight*	75/50g	80g	75g	250g	80g
Max. hardness of sample:	940 HV	940HV	1000HV	650HB	1200HV
Preparation of surface;					
▪ *Roughness class ISO*	N7	N7	N5	N9	N7
▪ *Max. roughness depth Rt*	10 µm	10 µm	2.5 µm	30 µm	10 µm
▪ *Average roughness Ra*	2 µm	2 µm	0..4 µm	7 µm	2 µm
Min. weight of sample;					
▪ *Of compact shape*	5kg	5kg	1.5 kg	15kg	5kg
▪ *On solid support*	2kg	2kg	0.5kg	5kg	2kg
▪ *Coupled on plate*	0.1kg	0.1kg	0.02kg	0.5kg	0.1kg
Min. thickness of sample;					
▪ Coupled	3mm	3mm	1mm	10mm	3mm
▪ Min. thickness of hardened.layers	0.8mm	0.,8mm	0.2mm	-	0.8mm
Indentation of test tip;					
With 300 HV					
▪ *Diameter*	0.54mm	0.54mm	0.38mm	1.03mm	0.54mm
▪ *Depth*	24µm	24µm	12µm	53µm	24µm
With 600 HV					
▪ *Diameter*	0.45mm	0.45mm	0.32mm	0.90mm	0.45mm
▪ *Depth*	17µm	17µm	8µm	41µm	17µm
With 800 HV					
▪ *Diameter*	0.35mm	0.35mm	0.30mm	-	0.35mm
▪ *Depth*	10µm	10µm	7µm	-	10µm



Couplant

Light parts can be coupled to a solid base plate using a thin layer of coupling paste. Both contact surfaces must be perfectly flat.

Impact Device C

Special feature:
Reduced impact energy (approximately 1/4 of that for type D).

Application:
Surface hardened components, coatings, thin walled or impact sensitive components (small measuring indentation).

Impact Device D

Special feature
Universal standard unit.

Application:
For the majority of hardness testing assignments.

Impact Device D+15

Special feature:
Particularly slim front section and with measuring coil moved back

Application:
Hardness measurements in grooves and on recessed surfaces

Impact Device DC

Special feature:
Extremely short impact device. Spring loaded with a special loading stick. Otherwise as for type D.

Application:
Use in very confined spaces, e.g. in holes, cylinders or for internal measurements on assembled machines.

Impact Device DL

Special feature:
Needle front section diameter 4.2mm, length 50mm.
Application:
Measurements in extremely confined spaces

Impact Device G

Special feature: Enlarged test tip, increased impact energy (approxmately 9 times that of type D) Low demands on measuring surface finish. For measurements in the Brinel range only (max. 650 HB)

Application: Solid components, e.g. heavy castings and forgings

Impact Device E

Special feature: Synthetic diamond test tip (approximately 5000 HV).
Application: For measurements in the extremely high hardness range (always in excess of 50 HRC/650 HV). Tool steels with high carbide content inclusions. For measurements up to 1200 HV

Impact body D

Impact body G

Test block D, Test block G

For performance tests of dynamic hardness testers series test block D is available (in HLD hardness value). Block tolerance allowed is ± 6 units HLD. Values too low indicate that your impact device is dirty. Value too high indicate that the spherical test tip is flattened, or the test block is covered with indents. Optional: similar test block D but UKAS certified in any hardness scale such as HRC or HV for traceable reference. Test block G is larger with lower hardness and suitable for testing G impact devices.

Support rings

On curved surfaces having a radius of under 30mm, effective positioning on the component is facilitated by the use of support rings.
This ring can be screwed on front of the impact device.
Set of 7 rings
Convex: 10-15mm, 14.5-30mm, 25-50mm
Concave: 11-13mm, 12.5-17mm, 16.5-30mm
Universal: One model

WILSON WOLPERT

PORTABLE VICKERS HARDNESS "DYNATESTOR" ™

Hardness tester WHV-400 for portable accurate testing on metals, plastics and ceramics

STANDARD DELIVERY
- Main unit
- Probe with one fixed load
- Cable
- Power supply 100-240V / 50-60Hz
- Suitcase
- Manual
- WILSON-WOLPERT certificate

SOFTWARE OPTIONS FOR THE MAIN UNIT
- SPS Option for use in automated testing systems
- Measurement of hardening depth
- Measurement of sinter materials
- Storage of 30000 measurements

OPTIONAL ACCESSORIES
- High precision stand for probe WH4S
- Probe shoes for flat surfaces
- Probe shoes for convex surfaces 10- 50mm
- Probe shoes for convex surfaces 50- 250mm
- Probe SL type (slim nose)
- Probe shoes for probe SL type (width 21mm)
- Windows software program WH4DAT for data transmission to the PC (incl. cable)
- Windows software program WH4CON for production-following hardness testing
- Plastic handle for probe WH4G
- Carrier bag for main unit and accessories

VERY SUITABLE FOR

THIN MATERIALS

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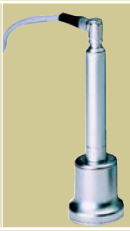


Probe support for flat surfaces

High presicision stand WH-4S

- Ultrasonic Contact Impedance test principle: very accurate!
- Suitable for hardness tests on metals, plastics, ceramics
- Direct reading in Vickers HV, and direct conversion to HRC, HRB, HB and UTS
- High reproducibility within ±1%
- Extensive range of application at locations difficult to access
- Large memory, statistics and data output
- Windows software for testing, data processing and documentation

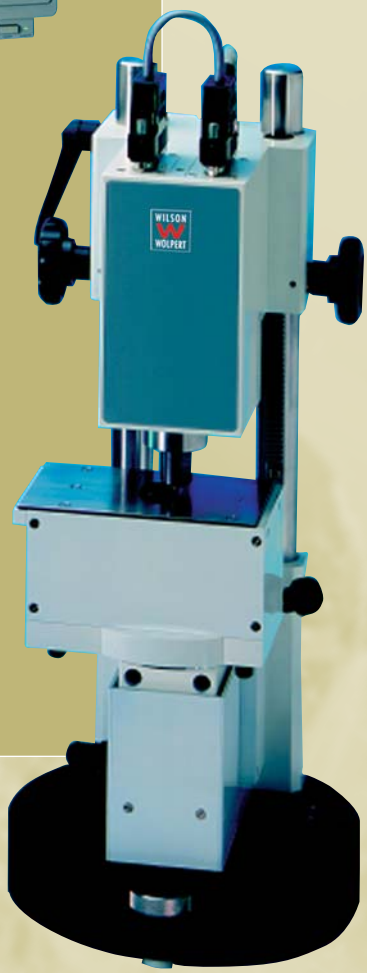
Technical specifications

Measuring principle	According to the UCI method (ultrasonic contact impedance principle)		
Indenter	Vickers diamond (angle 136°)		
Test load	3N, 10N, 20N, 30N, 49N, 98N (selectable)		
Measuring range	Vickers	HV	10 - 3000 (direct)
	Rockwell	HRC	20 - 68 (conversion)
	Rockwell	HRB	41 - 99.5 (conversion)
	Brinell	HB	76 - 447 (conversion)
	UTS	N/mm²	255 - 2180 (conversion)
Reproducibility	Vickers	HV ± 1%	
	Rockwell	HRC ± 0.5	
	Rockwell	HRB ± 1.2	
	Brinell	HB ± 1%	
Applicable test materials	Primarily metals; plastics or ceramics may be tested using a standard calibration block		
Display	Large graphical backlit display, contrast and brightness adjustable, display of hardness scales HV, HRC, HB		
Calibration	Storage of up to 20 calibrations for different materials		
Memory	1000 readings, storage in batches with date, hour, and go/no go judgment		
	Optional: memory for 30.000 readings		
Statistics	Mean value, minimum, maximum, standard deviation absolute and relative. Delete single readings		
Interface	Serial:	RS-232C and RS485	
	Parallel:	Printer	
Printer output	Prints hardness values, hour and date. Prints statistics of stored data		
Power	Power supply 100-240V / 50-60Hz		
Batteries	Rechargeable 9.6V / 1700 mAh (2.5 hours charging, 5 hours continuous use)		
Operating temperature	0 - 50°C		
Dimensions	Display unit:	85 x 225 x 198mm	
	Probe:	19.5 diameter x 175mm length	
Weight	2200gr (including probe 190gr)		

WILSON WOLPERT

IRHD & MICRO-IRHD & SHORE SYSTEM WHM-400

Automatic digital hardness tester for plastics and elastomers

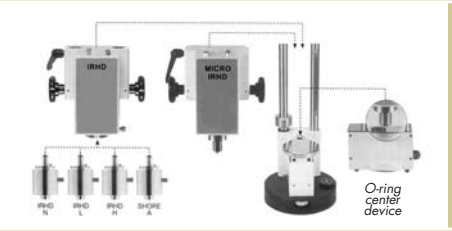


STANDARD DELIVERY
- Stand with double column
- Measuring unit: see optional
- Controller unit (no pc)
- IRHD-software (Windows)
- Data cables
- Power cable
- Manual
- WILSON-WOLPERT certificate

OPTIONAL ACCESSORIES
- Personal computer, monitor
- Measuring unit MICRO-IRHD
- Measuring unit IRHD
- Indenter insert Method N
- Indenter insert Method L
- Indenter insert Method H
- Indenter insert Shore A
- Testplates certified
- O-ring centering device for O-rings with cross sections 0.8 to 8mm

METHOD	APPLICATION
Micro-IRHD	Small, thin materials, O-rings
IRHD-N (Normal)	Medium materials > 30 IRHD
IRHD-L (Low)	Softer materials from 10 - 35 IRHD
IRHD-H (High)	Hard materials from 85 - 100 IRHD

- Provides hardness readings conform to the International Rubber Hardness Degree IRHD N, H, L, Micro-IRHD and Shore A
- Very accurate system with max. 0.03 micron linearity error
- Modular system with 2 measuring heads available for MICRO-IRHD or IRHD/Shore.
- Measuring head for IRHD/Shore features 4 inserts for method N (normal), method L (low), method H (high) and Shore A
- Top quality system for daily use
- User-friendly operating software under Windows
- Determines hardness value, IRHD/time graphics, statistics
- Direct print-out of test reports and label printing
- ASCII output
- O-ring centering device optional



← *Modular measuring system*

Software →

Measuring head 1 IRHD N, H, L and Shore
This measuring unit (see schedule) provides hardness readings on elastomers and plastics with a specimen thicker than 6mm. Four types of inserts are available for IHRD/Shore: IRHD-N with ball 2.5mm, IRHD-L with ball 5mm, IRHD-H with ball 1mm and Shore A are available. You can fit the inserts without tools into the measuring head. An electronic identification of each insert is housed in the measuring head. The proper software for each insert is setup automatically. Therefore this system eliminates operator error. System control is fully automatic by means of pc and WILSON-WOLPERT IRHD/Shore software under Windows. Software features are hardness value, graph, statistics, test report, label printing and more. An ASCII-outputfile is provided.

Measuring head 2 for Micro-IRHD
This system provides hardness readings on elastomers according to Micro-IRHD standards. Recommended specimen thickness is 1 to 5mm. The system is fully controlled by Wilson-Wolpert software under MS-Windows. Software features are hardness value, graph, statistics, test report, label printing and more. An ASCII-outputfile is provided. The table drives automatically onto the measuring head. The minor load is lowered automatically to the indentor. This position represents 100 Micro-IRHD. Now the major load is lowered. The indentation is digitally measured after 30 seconds and converted into Micro-IRHD units.

O-ring center device
The O-ring center device is working in conjunction with the Micro-IRHD system. O-rings with cross sections of 0.8mm to 8mm can be placed easily on the measuring table. A pin represents the stop position. The actual cross section is entered into the software. Electric built-in motors are driving the table onto the measuring axis. You can now measure the highest point of an O-ring.
See technical specs as well.

Technical specifications

Hardness type	**MICRO-IRHD**	**IRHD-N**	**IRHD-L**	**IRHD-H**
Measuring range (units)	30-100	30-85	10-35	85-100
Indenter diameter	0.4mm	2.5mm	5.0mm	1.0mm
Force	153.3mN	5.7mN	5.7mN	5.7mN
Pressure plate	235mN	8.3mN	8.3mN	8.3mN
Measuring way	0.3mm	1.8mm	1.1-0.099mm	0.44mm
Recommended sample thickness	1-5mm	8-10mm	10-15mm	8-10mm
Max. sample thickness	115mm	115mm	115mm	155mm
Standards	DIN ISO48, ASTM D1415, ISO 868, DIN 53505			
Linearity error system	0.03 micron			
Measuring time	4 to 99 sec			
Up-down movements of weights	Motorized			
Support table diameter	98mm			
Travel of support table	25mm			
Controller data output	RS-232 interface			
Software	MS-Windows			
Computer/monitor	Not included			
Base diameter	200mm			
Height	460mm			
Weight	Ca. 14.5kg			
O-ring center device	For cross sections from 0.8mm - 8.0mm			
	Measuring table dimensions 85 x 130mm			

WILSON WOLPERT

SHORE DUROMETER WHS-150 ™

Handheld durometer for Shore hardness testing

STANDARD DELIVERY
- Main unit
- Vinyl covered carrying case
- WILSON-WOLPERT certificate

OPTIONAL ACCESSORIES
- Operating stands WHS-OS
- Elastomer test specimen, all scales

- Analogue durometers for all specific scales
- Presser foot area of diameter 18mm (standard foot)
- Rugged die cast aluminium housing
- Stainless steel precision compression mainspring
- Glass lens resists scratching and discoloration
- Can be used in any position
- Meets or exceeds DIN 53505, ASTM D 2240
- Easy recalibration
- Operating stands optional

DUROMETER TYPES	INDENTOR SHAPE	MAIN SPRING
TYPE A (ASTM D2240) Soft rubber, plastics and elastomers, printer's rolls	**Flat Cone Point** 35° Included Angle	822 gr.
TYPE D (ASTM D2240) Hard rubber and plastics such as thermo plastics, flooring and bowling balls	**Sharp Cone Point** 30° Included Angle	4536 gr.
TYPE B (ASTM D2240) Harder elastomers and plastics. Paper and fibrous materials. Use above 93 Duro A	**Sharp Cone Point** 30° Included Angle	822 gr.
TYPE C (ASTM D2240) Medium hard elastomers and plastics. Also useful to avoid surface marks	**Flat Cone Point** 35° Included Angle	4536 gr.
TYPE DO (ASTM D2240) Dense granular material, textille windings	**3/32" Spherical**	4536 gr.
TYPE O (ASTM D2240) Very soft elastomers, textille windings, soft granular materials. Use below 20 Duro A	**3/32" Spherical**	822 gr.
TYPE OO (ASTM D2240) Light foams, sponge rubber gels, animal tissue	**3/32" Spherical**	113 gr.

Technical specifications

Test scales available	A, B, C, D, DO, O, OO
Result display	Hardness result Shore
Scale graduations	0-100
Result display resolution	1 pt. increments
Pointer sweep	360°
Dial diameter	Ø57mm
Pressure foot diameter	18mm (DIN)
Pressure foot length	65mm
Weight	168gr

WILSON WOLPERT

SHORE DUROMETER WHS-180 ™

Handheld durometer for Shore hardness testing with max hand

STANDARD DELIVERY
- Main unit
- Vinyl covered carrying case
- WILSON-WOLPERT certificate

OPTIONAL ACCESSORIES
- Operating stands WHS-OS
- Elastomer test specimen, all scales

- Analogue durometers for all specific scales
- Reads maximum and creep
- Rugged die cast aluminium housing
- Stainless steel precision compression mainspring
- Glass lens resists scratching and discoloration
- Can be used in any position
- Meets or exceeds DIN 53 505 or ASTM D 2240
- Easy recalibration
- Operating stands optional

DUROMETER TYPES	INDENTOR SHAPE	MAIN SPRING
TYPE A (ASTM D2240) Soft rubber, plastics and elastomers, printer's rolls	**Flat Cone Point** 35° Included Angle	822 gr.
TYPE D (ASTM D2240) Hard rubber and plastics such as thermo plastics, flooring and bowling balls	**Sharp Cone Point** 30° Included Angle	4536 gr.
TYPE B (ASTM D2240) Harder elastomers and plastics. Paper and fibrous materials. Use above 93 Duro A	**Sharp Cone Point** 30° Included Angle	822 gr.
TYPE C (ASTM D2240) Medium hard elastomers and plastics. Also useful to avoid surface marks	**Flat Cone Point** 35° Included Angle	4536 gr.
TYPE DO (ASTM D2240) Dense granular material, textille windings	**3/32" Spherical**	4536 gr.
TYPE O (ASTM D2240) Very soft elastomers, textille windings, soft granular materials. Use below 20 Duro A	**3/32" Spherical**	822 gr.
TYPE OO (ASTM D2240) Light foams, sponge rubber gels, animal tissue	**3/32" Spherical**	113 gr.

Technical specifications

Test scales available	A, B, C, D, DO, O
Result display	Hardness result Shore
Scale graduations	0-100
Result display resolution	1 pt. Increments
Pointer sweep	360°
Dial diameter	Ø57mm
Pressure foot diameter	18mm
Pressure foot length	65mm
Weight	168gr

WILSON WOLPERT

DIGITAL SHORE DUROMETER WHS-250 ™

Handheld durometer featuring 9 interchangeable test scale probes

STANDARD DELIVERY
- Main unit
- Test scale probes: see options
- Batteries
- Manual
- WILSON-WOLPERT certificate

OPTIONAL ACCESSORIES
- Indentor heads for scales A, B, C, D, DO, O, OO, OOO, T
- Adaptor 220V AC or 110V AC
- Data-cable WHS-4C (between main unit and indentor head)
- Operating stand with constant load
- Operating stand for automaticoperating
- Stand for main unit
- Case

WILSON WOLPERT

9 probes available for very cost effective test solutions

- One durometer for 9 different Shore scales
- 9 pre-calibrated interchangeable test scale probes available
- Audible sound indicates exact amount of pressure
- Test completed signal
- Fits comfortably in hand or stand
- Bright & clear backlit LCD display
- Quick pass/fail testing
- RS-232 serial data output port
- SPC capabilities, all statistics from up to 256 test result
- 2000 hours continuous use with standard batteries: no cables!

DUROMETER TYPES	INDENTOR SHAPE	MAIN SPRING
TYPE A (ASTM D2240) Soft rubber, plastics and elastomers, printer's rolls	**Flat Cone Point** 35° Included Angle	822 gr.
TYPE D (ASTM D2240) Hard rubber and plastics such as thermo plastics, flooring and bowling balls	**Sharp Cone Point** 30° Included Angle	4536 gr.
TYPE B (ASTM D2240) Harder elastomers and plastics. Paper and fibrous materials. Use above 93 Duro A	**Sharp Cone Point** 30° Included Angle	822 gr.
TYPE C (ASTM D2240) Medium hard elastomers and plastics. Also useful to avoid surface marks	**Flat Cone Point** 35° Included Angle	4536 gr.
TYPE DO (ASTM D2240) Dense granular material, textilile windings	**3/32" Spherical**	4536 gr.
TYPE O (ASTM D2240) Very soft elastomers, textilile windings, soft granular materials. Use below 20 Duro A	**3/32" Spherical**	822 gr.
TYPE OO (ASTM D2240) Light foams, sponge rubber gels, animal tissue	**3/32" Spherical**	113 gr.
TYPE OOO (ASTM D2240) Ultra soft gels and sponge rubber	**1/2" Spherical**	113 gr.

Technical specifications

Test scales available	A, B, C, D, DO, O, OO, OOO, T
Standards	DIN53505, ASTM D2240, JIS K6301
Result display	Scale, hardness result, average value, lot number, part number, test number, tolerance, time, temperature
Result display resolution	0.1
Test interface buttons	Test/recall, select, next, power, delete, print,
Dwell time	1 to 99sec.
Memory	256 Test results
Data output	RS-232C, adjustable
Statistics	Total test, highest hardness, lowest hardness, range, standard deviation, average
Operating temperature	10-38°C
Pressure foot indication range	up to 5kg
Power requirements	4 AAA batteries, optional 220V AC adaptor
Battery life	2000 Hours, 24 hours continuous using back lighting
Dimensions	Height 190mm, width 76mm, depth 38mm
Weight	0.5kg

OPERATING STAND WHS-OSA/OSB/OSC ™

Operating stands for Shore hardness testers

OPERATING STAND WHS-OSA ™
Solid stand for Shore analogue hardness testers

- Operating stand for WHS-150/180
- Convenient and accurate way for repetitive testing of hardness
- Eliminates human error

Technical specifications

Lateral extension	115mm
Support table diameter	98mm
Max. sample thickness	180mm
Construction	Stable Aluminium
Weight type D	Optional
Dust cover	Optional
Net weight	19.8kg
Durometer types	A/D/B/C/DO/O

WILSON WOLPERT

Standard delivery
- *Operating stand*
- *Manual*
- *WILSON-WOLPERT certificate*

Optional accessories for WHS-OSA
- *WHS-150/180 durometer*

Optional accessories for WHS-OSB/C
- *WHS-250 durometer*

OPERATING UNIT WHS-OSB ™

- Automatic operating stand for WHS-250 test probes
- Fully automatic operation
- Provides constant load and velocity
- Down dwell time from 1 to 99 sec

TECHNICAL SPECIFICATIONS

Type WHS-OSB	for WHS-250 digital durometer
Power	220V / 50-60Hz
Dimensions	300x250x190mm
Weight	15 kg

OPERATING UNIT WHS-OSC ™

- Mechanical operating stand for WHS-250 test probes
- Provides constant load and velocity

TECHNICAL SPECIFICATIONS

Type WHS-OSC	for WHS-250 digital durometer

APPLICATIONS OF SHORE DUROMETERS ™

Durometer type A (ASTM D2240)
Soft rubber, plastics and elastomers, printer's rolls

Indentor shape Flat Cone Point — 35° Included Angle
Main spring — 822 gr.

Durometer type D (ASTM D2240)
Hard rubber and plastics such as thermo plastics, flooring and bowling balls

Indentor shape Sharp Cone Point — 30° Included Angle
Main spring — 4536 gr.

Durometer type B (ASTM D2240)
Harder elastomers and plastics. Paper and fibrous materials. Use above 93 Duro A

Indentor shape Sharp Cone Point — 30° Included Angle
Main spring — 822 gr.

Durometer type C (ASTM D2240)
Medium hard elastomers and plastics. Also useful to avoid surface marks

Indentor shape Flat Cone Point — 35° Included Angle
Main spring — 4536 gr.

Durometer type DO (ASTM D2240)
Dense granular material,textille windings

Indentor shape — 3/32" Spherical
Main spring — 4536 gr.

Durometer type O (ASTM D2240)
Very soft elastomers, textille windings, soft granular materials.
Use below 20 Duro A

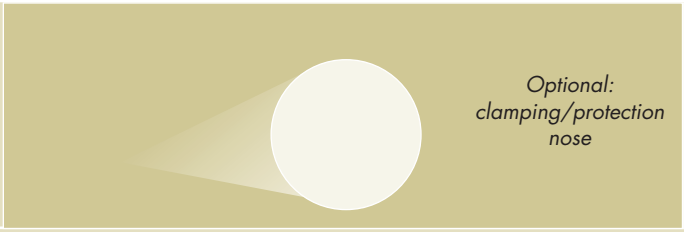
Indentor shape — 3/32" Spherical
Main spring — 822 gr.

Durometer type OO (ASTM D2240)
Light foams, sponge rubber gels, animal tissue

Indentor shape — 3/32" Spherical
Main spring — 113 gr.

Durometer type OOO (ASTM D2240)
Ultra soft gels and sponge rubber

Indentor shape — 1/2" Spherical
Main spring — 113 gr.



Optional: clamping/protection nose

With variable oil brake to ensure correct load application

- Basic regular Rockwell tester featuring accuracy, reliability and durability at an extremely affordable price
- Rugged construction, will stand up to the harshest environments
- Direct analogue reading of Rockwell scales HRC, B, A, F
- Accuracy conform EN-ISO 6508 and ASTM E-18
- Mechanical test cycle without the need of electricity
- Easy load force selection by robust dial knob
- Oil brake with variable damping by adjustable knob
- Large working space accomodates also larger specimen
- **Standard delivery including accessories ready for testing all scales**

Technical specifications

Rockwell scales	A, B, C, F
Hardness resolution	0.5 of a Rockwell unit
Test loads	10kgf preload / 60, 100, 150kgf total load
Display	Dial indicator
Test force application	By force lever
Load duration	Apply conform standard
Data output	Non
Accuracy	Conform EN-ISO 6508 and ASTM E-18
Specimen accommodation	Vertical space 170mm (6.7")
	Horizontal space (from centre-line) 165mm (6.5")
Specimen access	External surfaces
	Cylindrical surfaces down to 3mm diameter
Power supply	Non
Machine dimensions	Width 277mm, depth 516mm, height 715mm
Machine weight	85kg

www.wilsonwolpert.com

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WILSON WOLPERT

MATERIALS TESTING INSTRUMENTS

W04-281